

SUBCHAPTER A : VISIBLE EMISSIONS AND PARTICULATE MATTER

VISIBLE EMISSIONS

§111.111. Requirements for Specified Sources.

(a) Visible Emissions. No person may cause, suffer, allow, or permit visible emissions from any source, except as follows:

(1) Stationary Vents. Visible emissions from any vent shall not exceed the following opacities and must meet the following requirements:

(A) Opacity shall not exceed 30% averaged over a six-minute period.

(B) Opacity shall not exceed 20% averaged over a six-minute period for any source on which construction was begun after January 31, 1972.

(C) Opacity shall not exceed 15% averaged over a six-minute period for any source having a total flow rate greater than or equal to 100,000 actual cubic feet per minute, unless an optical instrument capable of measuring the opacity of emissions is installed in the vent in accordance with subparagraph (D) of this paragraph. Facilities utilizing such instruments shall meet opacity limits outlined in §111.111(a)(1)(A) or (B) as applicable. Records of all such measurements shall be retained as provided for in §101.8 of this title (relating to Sampling).

(D) Any opacity monitoring system installed as provided for in subparagraph (C) of this paragraph must satisfy the New Source Performance Standards requirement for opacity continuous emissions monitoring systems (CEMS) as contained in 40 Code of Federal Regulations (CFR) Part 60, Appendix B, Performance Specification 1. In order to demonstrate compliance with Performance Specification 1, the system shall undergo performance specification testing as outlined in 40 CFR 60.13. The facility will maintain records of all such testing for a period of not less than two years which shall be available for inspection by federal, state, and local air pollution control agencies. Compliance with this provision shall be accomplished within one year of the effective date of this rule, except as specified in paragraph (2) of this subsection.

(E) Visible emissions during the cleaning of a firebox or the building of a new fire, soot blowing, equipment changes, ash removal, and rapping of precipitators may exceed the limits set forth in this section for a period aggregating not more than six minutes in any 60 consecutive minutes, nor more than six hours in any ten-day period. This exemption shall not apply to the emissions mass rate standard, as outlined in §111.151(a) of this title (relating to Allowable Emissions Limits).

(F) Compliance with subparagraphs (A), (B), and (C) of this paragraph shall be determined by applying the following test methods, as appropriate. The highest reading obtained shall determine compliance with the appropriate visible emission limit:

- (i) CEMS as described in paragraph 111.111(a)(1)(D),
- (ii) Test Method 9 (40 CFR 60, Appendix A),
- (iii) Alternate Method 1 to Method 9, Light Detection and Ranging (40 CFR 60, Appendix A), or
- (iv) Equivalent test method approved by the executive director of the Texas Natural Resource Conservation Commission (TNRCC) and the United States Environmental Protection Agency (EPA).

(G) Current certification of opacity readers for determining opacities under 40 CFR 60, Appendix A, Method 9, shall be accomplished by the successful completion of a TNRCC Visible Emissions Evaluator's course by opacity readers no more than 180 days before the opacity reading.

(2) Sources Requiring Continuous Emissions Monitoring. Beginning March 1, 1994, all stationary vents located at the sources specified in this paragraph shall be equipped with a calibrated and properly operating CEMS for opacity. The system shall be calibrated, installed, operated, and maintained as specified in 40 CFR 51, Appendix P, hereby incorporated by reference.

(A) Steam generators fired by solid fossil fuel with an annual average capacity factor of greater than 30%, as reported to the Federal Power Commission for calendar year 1974, and with a heat input of greater than 250 million British thermal units per hour.

(B) Steam generators that burn oil or a mixture of oil and gas and are not able to comply with the applicable particulate matter and opacity regulations without the use of particulate matter collection equipment, and have been found to be in violation of any visible emission standard contained in a State Implementation Plan.

(C) Catalyst regenerators for fluid bed catalytic cracking units of greater than 20,000 barrels per day of total feed capacity.

(3) Exemptions from Continuous Emissions Monitoring Requirements. Opacity monitors shall not be installed or used to determine opacity from any gas stream or portion of a gas stream containing condensed water vapor which could interfere with proper instrument operation, as determined by the executive director. Opacity monitoring techniques as listed in (a)(1)(F) of this section may be substituted with the approval of the executive director and EPA, the highest reading of which will be used to determine compliance with the appropriate opacity standard. If opacity is

determined through 40 CFR 60, Appendix A, Method 9, readings shall be made daily, unless weather or other conditions prevent visual observation.

(4) Gas Flares.

(A) Visible emissions from a process gas flare shall not be permitted for more than five minutes in any two-hour period, except as provided in §101.11(a) of this title (relating to Exemptions from Rules and Regulations). Process gas flares are those used in routine or scheduled facility operations. Acid gas flares, as defined in §101.1 of this title (relating to Definitions), are subject only to the provisions of subsection (a)(1) of this section. Beginning September 1, 1993, compliance with this subparagraph for process gas flares shall be determined:

(i) anytime there is an operational change in the flare that requires a permit amendment under Chapter 116 of this title (relating to Control of Air Pollution by Permits for New Construction or Modification). Compliance shall be determined using Reference Method 22 (40 CFR 60, Appendix A), Reference Method 9 (40 CFR 60, Appendix A), or an alternative test method approved by the executive director and EPA. The observation period for this compliance demonstration shall be no less than two hours unless noncompliance is determined in a shorter time period or operational changes are made to the flare that stop any observed smoking; and

(ii) by a daily notation in the flare operation log that the flare was observed including the time of day and whether or not the flare was smoking. For flares operated less frequently than daily, the observation will be made for each operation. The flare operator shall record at least 98% of these required observations. If smoking is detected, compliance with the emission limits of this paragraph shall be determined using Reference Method 22, Reference Method 9, or an alternative test method approved by the executive director and EPA. The observation period for this compliance determination shall be no less than two hours unless noncompliance is determined in a shorter time period or operational changes are made to the flare that stop the smoking. A Method 22 or Method 9 observation will be waived provided the operator reports the flare to be in an upset condition under the requirements of §101.6 of this title (relating to Notification Requirements for Major Upset).

(B) Flares used only during emergency or upset conditions are exempt from the compliance monitoring requirements of clauses (A)(i) and (A)(ii) of this paragraph.

(5) Motor Vehicles. Motor vehicles shall not have visible exhaust emissions for more than ten consecutive seconds. Compliance shall be determined as specified in 40 CFR 60, Appendix A, Method 22.

(6) Railroad Locomotives or Ships.

(A) Visible emissions shall not be permitted from any railroad locomotive, ship, or any other vessel to exceed an opacity of 30% for any five-minute period, except during reasonable periods of engine start-up.

(B) Compliance with subparagraph (A) of this paragraph shall be determined by applying the following test methods, as appropriate:

- (i) Test Method 9, (40 CFR 60, Appendix A), or
- (ii) equivalent test method approved by the executive director and EPA.

(7) Structures.

(A) Visible emissions shall not be permitted to exceed an opacity of 30% for any six-minute period from any building, enclosed facility, or other structure.

(B) Compliance with subparagraph (A) of this paragraph shall be determined by applying the following test methods, as appropriate:

- (i) Test Method 9 (40 CFR 60, Appendix A), or
- (ii) equivalent test method approved by the executive director and EPA.

(8) Other Sources.

(A) Visible emissions shall not be permitted to exceed an opacity of 30% for any six-minute period from all other sources not specified in §111.111 of this title (relating to Requirements for Specified Sources).

(B) Compliance with subparagraph (A) of this paragraph shall be determined by applying the following test methods, as appropriate:

- (i) Test Method 9 (40 CFR 60, Appendix A), or
- (ii) equivalent test method approved by the executive director and EPA.

(b) Compliance Determination Exclusions. Contributions from uncombined water shall not be included in determining compliance with this section. The burden of proof which establishes the applicability of this subsection shall be upon the person seeking to come within its provisions.

(c) Solid Fuel Heating Devices.

(1) Operating Restrictions. In the City of El Paso, including the Fort Bliss Military Reservation, no person shall operate a solid fuel heating device during a period when National Weather Service data indicates that an atmospheric stagnation condition exists or is predicted to exist. For the

purposes of this section, a solid fuel heating device shall be defined as any fireplace, wood heater, wood stove, wood-fired boiler, coal-fired furnace, or similar device burning any solid fuel which is used for aesthetic, cooking (excluding commercial cooking), or heating purposes, and located inside a building.

(2) Exemptions. An exemption from the requirements of this section may be granted by the executive director of the TNRCC if one or more of the following conditions are met:

(A) The solid fuel heating device is in a period of burn down; that is, a period of time not to exceed three hours for the cessation of combustion within the device;

(B) The solid fuel heating device is the sole source of heat for the building in which it is situated; or

(C) The solid fuel heating device becomes the sole source of heat within the building because of a temporary power loss.

Adopted June 18, 1993

Effective July 23, 1993

§111.113. Alternate Opacity Limitations.

The owner or operator of any facility who is unable to meet the opacity limitations of §111.111(a)(1)(A) and (B) of this title (relating to Requirements for Specified Sources) with available and economically reasonable control technology may apply to the Texas Natural Resource Conservation Commission (TNRCC) for approval of an alternate limit. Within 60 days after receipt of an application, the TNRCC staff will either determine that the application is complete or will determine that it is incomplete and provide a written list of deficiencies. There shall be no more than 180 days between the initial application and the issuance of a certification of completeness by the executive director. Failure to obtain such certification shall result in a voiding of the application. Within 90 days after issuance of the certification of completeness, an adjudicative public hearing will be conducted in accordance with the requirements of §103.31 of this title (relating to Calling the Hearing), §103.32 of this title (relating to Petition for Hearing Other Than a Petition for the Adoption of Rules), §103.33 of this title (relating to Action on Request for a Hearing), §103.34 of this title (relating to Docket of Hearings) and the undesignated head of this title (relating to Adjudicative Hearings). The application will be approved if the applicant provides for the hearing record a preponderance of evidence which substantiates that emissions resulting from the alternate opacity limit will not result in an exceedance of any ambient air quality standard or other ambient air concentration limit prescribed by the TNRCC or exacerbate any existing exceedance or cause or contribute to a nuisance as defined in §101.4 of this title (relating to Nuisance) and that:

(1) All applicable concentration and mass limitations are met; and

(2) The facility has failed to meet the applicable opacity limitation during performance tests conducted with both the affected facility and the air pollution control equipment needed to comply

with TNRCC regulations, and which were operating in a manner consistent with good engineering practice for minimizing the opacity of the emissions; and

(3) It is technically impractical or economically unreasonable for the facility to comply with the established opacity limits.

Adopted June 16, 1989

Effective July 18, 1989

INCINERATION

§111.121. Single-, Dual-, and Multiple-Chamber Incinerators.

No person shall cause, suffer, allow, or permit the burning of domestic, municipal, commercial, or industrial solid waste as defined in §101.1 of this title (relating to Definitions) in a Single-, Dual-, or Multiple-Chamber Incinerator, unless the conditions listed in paragraphs (1)-(7) of this section are met. For purposes of this section, "commercial waste" shall be defined as waste material generated from retail and wholesale establishments. The requirements of this section do not apply to hazardous waste incinerators.

(1) Particulate emissions shall not exceed 0.18 gram per dry standard cubic meter or 0.08 grain per dry standard cubic foot, front-half of sampling train only, when corrected for 7.0% oxygen (O₂) in the stack gas according to the formula:

$$P_c = P_m \times \frac{14}{21 - Y}$$

Where:

P_c is the corrected concentration of particulate matter,
P_m is the measured particulate matter concentration, and
Y is the measured concentration of O₂ in the stack gas using the Orsat method for O₂ analysis of dry flue gas as defined in 40 Code of Federal Regulations Part 60, Appendix A (Method 3).

(2) Hydrogen chloride emissions greater than 1.8 kilograms (4 pounds) per hour require a control device with a minimum removal efficiency of 95%.

(3) Carbon monoxide (CO) emissions shall not exceed 120 parts per million by volume dry basis, when corrected to 7.0% O₂ in the stack gas as specified in subsection (1) of this section. CO and O₂ shall be measured at the same location. Upon the approval of the executive director of the Texas Natural Resource Conservation Commission (TNRCC), a total hydrocarbon (THC) standard may be chosen as an alternative to the CO standard. In such cases, the emissions shall not exceed 20 parts

per million, when corrected to 7.0% O₂ in the stack gas as specified in paragraph (1) of this section. THC and O₂ shall be measured at the same location.

(4) O₂ content shall be maintained at greater than 4.0% by volume of the emissions of the incinerator, measured at the exit of the incinerator, or at an alternate location approved by the executive director or a designated representative of the TNRCC. Incinerators subject to the requirements of this section may operate at O₂ concentrations less than 4.0% by volume if compliance with paragraph (3) of this section can be continuously demonstrated at a lower O₂ concentration.

(5) Visible emissions shall not exceed an opacity of 5.0% averaged over any six-minute period.

(6) Compliance with the requirements of this section shall be as soon as practicable, but no later than July 31, 1990, except in the case of industrial solid waste incinerators, which shall be in compliance as soon as practicable, but no later than December 31, 1992.

(7) Incinerators burning not more than 100 pounds per hour of domestic, municipal, commercial, or industrial solid waste, based on the total weight of materials burned, shall be subject to an opacity limit of 5.0% averaged over a six-minute period and the requirements of §111.127(d) of this title (relating to Monitoring and Recordkeeping Requirements), but shall be otherwise exempt from the provisions of §§111.121, 111.123, 111.125, 111.127, and 111.129 of this title (relating to Incineration).

Adopted December 13, 1991

Effective February 12, 1992

§111.123. Medical Waste Incinerators.

No person shall cause, suffer, allow, or permit the burning of medical waste, as defined in §101.1 of this title (relating to Definitions), unless the incinerator meets the following requirements:

(1) On-site medical waste incinerators burning not more than 100 pounds per hour of waste must:

(A) Be equipped with a secondary chamber which maintains a temperature of 1400 degrees Fahrenheit (° F) or higher, measured at the exit of the secondary chamber and recorded continuously;

(B) Not exceed visible emissions of 5.0% opacity averaged over any six-minute period;

(C) Maintain written records as specified in §111.127(b) of this title (relating to Monitoring and Recordkeeping Requirements);

(D) Limit hours of operation as specified in §111.129(1) of this title (relating to Operating Requirements);

(E) Post current manufacturer's operating procedures as specified in §111.129(2); and

(F) Comply with the requirements of this section, as soon as practicable, but no later than December 31, 1991.

(2) On-site medical waste incinerators burning more than 100, but no more than 225 pounds per hour of waste, must:

(A) Be equipped with a secondary chamber which retains all combustion gases for 1.0 second or longer at a temperature of 1600° F or higher, measured at the exit of the secondary chamber and recorded continuously;

(B) Limit particulate emissions to 0.18 gram per dry standard cubic meter (g/dscm) or 0.08 grain per dry standard cubic foot (gr/dscf), front-half of sampling train only, when corrected for 7.0% oxygen (O₂) in the stack according to the formula specified in §111.121(1) of this title (relating to Single-, Dual-, and Multiple-Chamber Incinerators);

(C) Maintain an O₂ content at greater than 4.0% by volume of the emissions of the secondary chamber, measured at the exit of the secondary chamber or at an alternate location approved by the executive director or a designated representative of the Texas Natural Resource Conservation Commission (TNRCC);

(D) Not exceed visible emissions of 5.0% opacity averaged over any six-minute period;

(E) Maintain written records as specified in §111.127(b);

(F) Limit hours of operation as specified in §111.129(1);

(G) Post current manufacturer's operating procedures as specified in §111.129(2); and

(H) Comply with the requirements of this section, as soon as practicable, but no later than July 31, 1992.

(3) On-site medical waste incinerators burning more than 225 pounds per hour of waste, and commercial medical waste incinerators, as defined in §101.1 of this title (relating to Definitions), must:

(A) Be equipped with a secondary chamber which retains all combustion gases for 1.0 second or longer at a temperature of 1800° F or higher, measured at the exit of the secondary chamber and recorded continuously;

(B) Limit particulate emissions to 0.07 g/dscm or 0.03 gr/dscf, front-half of the sampling train only, when corrected for 7.0% O₂ in the stack gas as specified in §111.121(1);

(C) For hydrogen chloride emissions greater than 1.8 kilograms (4 pounds) per hour, a control device with a minimum removal efficiency of 95% is required;

(D) Limit carbon monoxide (CO) emissions to 100 parts per million by volume dry basis, when corrected to 7.0% O₂ in the stack gas as specified in §111.121(1). CO and O₂ shall be measured at the same location;

(E) Maintain an O₂ content at greater than 4.0% by volume of the emissions of the secondary chamber, measured at the exit of the secondary chamber or at an alternate location approved by the executive director or a designated representative of the TNRCC;

(F) Not exceed visible emissions of 5.0% opacity averaged over any six-minute period;

(G) Maintain written records as specified in §111.127(b);

(H) Post current manufacturer's operating procedures as specified in §111.129(2); and

(I) Comply with the requirements of this section as soon as practicable, but no later than July 31, 1990 for commercial medical waste incinerators, and December 31, 1992 for on-site medical waste incinerators.

Adopted October 12, 1990

Effective November 14, 1990

§111.124. Burning Hazardous Waste Fuels in Commercial Combustion Facilities.

No person shall cause, suffer, allow, or permit the burning of hazardous waste as fuel for energy recovery in any facility that accepts hazardous waste as fuel from off-site sources which involves a commercial transaction or a change in ownership of the waste and is not regulated by the United States Environmental Protection Agency at 40 Code of Federal Regulations (CFR) Part 264 or 265, Subpart O, unless the following requirements are met:

(1) Particulate emissions shall not exceed 0.18 gram per dry standard cubic meter or 0.08 grain per dry standard cubic foot, to include particulate matter caught by impinger train, when corrected for 7.0% oxygen (O₂) in the stack gas according to the formula specified in §111.121(1) of this title (relating to Single-, Dual-, and Multiple-Chamber Incinerators).

(2) Hydrogen chloride emissions greater than 1.8 kilograms (four pounds) per hour shall be controlled with a minimum removal efficiency of 95%.

(3) Destruction and removal efficiency (DRE) shall be at least 99.99% for each principal organic hazardous constituent (POHC) in each waste feed. The POHCs shall be selected according to the method at 40 CFR Part 264.342 and shall be approved in advance by the executive director. DRE shall be determined using the following formula:

$$DRE = \frac{(W_{in} - W_{out})}{W_{in}} \times$$

in which

W_{in} = the mass feed rate of an approved POHC in the waste stream feeding the combustion facility, and
 W_{out} = the mass emission rate of the same POHC present in exhaust emissions of the combustion device prior to release to the atmosphere.

(4) The facility shall perform a trial burn according to the requirements listed at 40 CFR Part 270.62 to determine compliance with paragraphs (1)-(3) of this section. The operating conditions and waste feed composition during a trial burn demonstrating compliance with the requirements of paragraphs (1)-(3) of this section shall be maintained as limits for subsequent operation for the facility. Substitution of new hazardous waste constituents and increases in the concentration of any hazardous waste constituent compared to the conditions existing during the trial burn will require retesting, unless such change or substitution has received written approval from the executive director. The operating limits shall be monitored continuously and shall include the following:

- (A) maximum carbon monoxide level in the exhaust gas of the combustion device,
 - (B) minimum O₂ level in the exhaust gas of the combustion device,
 - (C) maximum waste feed rate to the combustion device,
 - (D) minimum combustion temperature,
 - (E) an appropriate indicator of combustion gas velocity,
 - (F) maximum total hydrocarbons in the exhaust gas of the combustion device,
- and
- (G) any other operating limit determined necessary by the executive director to ensure that the requirements of paragraphs (1)-(3) of this section are met.

(5) The facility shall not burn any chlorinated hazardous waste or hazardous waste containing any of the following metals, unless the executive director has established an enforceable

emission limit designed to protect public health for each metal and for toxic products of incomplete combustion.

Metals

Arsenic	Chromium
Antimony	Lead
Barium	Mercury
Beryllium	Silver
Cadmium	Thallium

(6) The facility shall maintain an automatic waste feed cutoff system which shall activate if the facility is not operating within the limits determined in accordance with paragraph (4) of this section and shall remain activated until the facility is operating within the limits determined in accordance with paragraph (4) of this section.

(7) During start-up or shutdown of the facility, hazardous waste fuels must not be fed into the combustion zone, unless the facility is operating within the limits determined in accordance with paragraph (4) of this section.

(8) Fugitive emissions from the combustion zone shall be controlled by maintaining the combustion zone pressure lower than atmospheric pressure or by keeping the combustion zone totally sealed to prevent fugitive emissions.

(9) Compliance with the requirements of paragraphs (1)-(4) and (6)-(8) of this section shall be as soon as practicable, but no later than December 31, 1991. Compliance with paragraph (5) shall be as soon as practicable, but no later than July 31, 1992. This paragraph applies to facilities burning hazardous waste as fuel prior to the effective date of this section. Facilities permitted after that date will be subject to compliance dates specified by permit.

Adopted May 10, 1991

Effective July 11, 1991

§111.125. Testing Requirements.

Upon the request of the executive director or a designated representative of the Texas Natural Resource Conservation Commission (TNRCC), or a representative of the United States Environmental Protection Agency, or the local air pollution control agency, compliance with §111.121 of this title (relating to Single-, Dual-, and Multiple-Chamber Incinerators) and §111.123 of this title (relating to Medical Waste Incinerators) shall be demonstrated by application of the test methods included in paragraphs (1)-(4) of this section, as appropriate. Compliance with §111.124 of this title (relating to Burning Hazardous Waste Fuels in Commercial Combustion Facilities) shall be demonstrated by application of the test methods included in paragraphs (1)-(5) of this section. Test reports prepared to demonstrate compliance with §111.124 shall clearly document the operating conditions and waste feed composition existing during the test.

(1) Particulate matter. Test Method 5 [40 Code of Federal Regulation (CFR) 60, Appendix A] modified to include particulate caught by impinger train;

(2) Hydrogen chloride. Test Method outlined in Chapter 5 of the latest edition of the TNRCC Sampling Procedures Manual;

(3) Carbon monoxide. Test Method 10, 10A, or 10B (40 CFR 60, Appendix A) or, for nonmedical waste incinerators, total hydrocarbons: Test Method 25A (40 CFR Part 50, Appendix A);

(4) Opacity. Test Method 9 (40 CFR Part 60, Appendix A); or

(5) Destruction and removal efficiency. Destruction and removal efficiency, measuring principal organic hazardous constituent (POHC) mass feed rate to the commercial combustion facility, measuring the mass emission rate of POHC in the stack gas, and analyzing the POHC sample obtained from the stack gas, using the following test methods, respectively: Method 8240 of SW-846 "Test Methods for Evaluating Solid Waste," Method 0030 (VOST) of SW-846, Method 5040 of SW-846.

(6) Alternative methods. Equivalent test methods approved by the executive director.

Adopted May 10, 1991

Effective July 11, 1991

§111.127. Monitoring and Recordkeeping Requirements.

(a) Incinerators burning not more than 100 pounds per hour of medical waste as specified in §111.123 of this title (relating to Medical Waste Incinerators) shall install, calibrate, maintain, and operate a monitoring device that continuously measures and records the temperature of the exhaust gas of the incinerator. All incinerators burning more than 100 pounds per hour of waste as specified in §111.121 of this title (relating to Single-, Dual-, and Multiple-Chamber Incinerators) and §111.123 shall install, calibrate, maintain, and operate a monitoring device that continuously measures and records the oxygen (O₂) content and temperature of the exhaust gas of the incinerator. The monitoring device for incinerators equipped with a wet scrubbing device shall continuously measure and record the pressure drop of the gas flow through the wet scrubbing device. Commercial medical waste incinerators and incinerators burning more than 225 pounds per hour of domestic, municipal, commercial, medical, or industrial solid waste shall be equipped with continuous emissions monitors which measure and record in-stack carbon monoxide (CO) in addition to the other requirements of this section. For non-medical incinerators, a total hydrocarbon (THC) monitor may be substituted for the CO monitor if a THC standard is established pursuant to §111.121(3). For municipal incinerators built prior to 1990 and burning less than 2,000 pounds per hour of municipal solid waste, a stack test for CO may be performed to establish O₂ and temperature requirements necessary to maintain minimum CO emissions, and monitoring of these parameters may be substituted for the CO monitoring device. The O₂, THC, and CO monitoring devices described in this section must be certified for use following procedures outlined in 40 Code of Federal Regulations (CFR) 60, Appendix B, Performance Specifications 3 and 4, respectively. Such certification must be approved by the executive director or a

designated representative of the Texas Natural Resource Conservation Commission (TNRCC). Compliance determinations may be made based on results of monitoring with a certified monitor. Compliance with the CO and/or THC requirements specified in §111.121(3), §111.123(3)(D), and §111.124(4) of this title (relating to Burning Hazardous Waste Fuels in Commercial Combustion Facilities) may be demonstrated using a rolling hourly average. The rolling hourly average shall be defined as the arithmetic mean of the 60 most recent one-minute concentrations measured by the continuous monitoring system.

(b) The owner or operator of an incinerator or commercial combustion facility subject to the requirements of §§111.121; 111.123; 111.124; and 111.125 of this title (relating to Single-, Dual-, and Multiple-Chamber Incinerators; Medical Waste Incinerators; Burning Hazardous Waste Fuels in Commercial Combustion Facilities; and Testing Requirements), respectively, shall maintain written records of all monitoring and testing results, hours of operation, and quantity of waste burned. Such records shall be retained for a period of not less than two years before being destroyed. Such records shall be made available upon request by authorized representatives of the TNRCC, the United States Environmental Protection Agency (EPA), or local air pollution control agencies. Alternately, for facilities other than commercial combustion facilities, in the absence of records verifying waste quantities burned, the design capacity of the unit will be used to determine applicable controls.

(c) The owner or operator of a commercial combustion facility subject to the requirements of §111.124 of this title (relating to Burning Hazardous Waste Fuels in Commercial Combustion Facilities) shall install, calibrate, maintain, and operate a monitoring device that continuously measures and records the waste feed rate, combustion gas velocity, opacity, O₂ content, CO content, THC content, and temperature of the exhaust gas of the combustion device. CO and THC shall be corrected to 7.0% O₂, reported on a dry basis, and measured in the same location. The O₂, THC, CO, combustion gas velocity, and opacity devices must be certified for use following procedures outlined in 40 CFR Part 60. Such certification must be approved by the executive director or his designated representative of the TNRCC. Compliance determinations may be made based on results of monitoring with a certified monitor.

(d) Upon the request of the executive director or a designated representative of the TNRCC, EPA, or local air pollution control agency, the owner or operator of an incinerator which is exempt from the requirements specified in §111.121 of this title (relating to Single-, Dual-, and Multiple-Chamber Incinerators) and whose incinerator has the capacity to burn more than 100 pounds per hour shall maintain written records of the amount of waste burned. Such records shall be retained for a period of not less than two years before being destroyed.

Adopted December 13, 1991

Effective February 19, 1992

§111.129. Operating Requirements.

The owner or operator of incinerators or commercial combustion facilities subject to the requirements of §§111.121; 111.123; 111.124; 111.125; and 111.127 of this title (relating to Single-, Dual-, or Multiple-Chamber Incinerators; Medical Waste Incinerators; Burning Hazardous Waste Fuels

in Commercial Combustion Facilities; Testing Requirements; and Monitoring and Recordkeeping Requirements), respectively, shall meet the following operating requirements:

(1) Except in the case of incinerators with continuous opacity or carbon monoxide monitors, or equivalent monitors approved by the executive director or a designated representative of the Texas Natural Resource Conservation Commission, the incinerator shall be limited in hours of operation from one hour after sunrise to one hour before sunset; and

(2) Current manufacturer's operating procedures shall be posted on or near each incinerator or the incinerator control room, and the incinerator shall be operated in accordance with those procedures.

Adopted May 10, 1991

Effective July 11, 1991

ABRASIVE BLASTING OF WATER STORAGE TANKS PERFORMED BY PORTABLE OPERATIONS

§111.131. Definitions.

Abrasive blasting - The operation of cleaning or preparing a surface by forcibly propelling a stream of abrasive material against the surface.

Hydroblasting - Any abrasive blasting using high pressure liquid as the propelling force or as the active cleaning agent.

Private residence - A residence not occupied or used solely by the owner of the property upon which the water storage tank to be blasted is located.

Public area - An outdoor area where it may be reasonably anticipated that the public could congregate for more than short-term periods, including but not limited to schools, day care centers, convalescent centers, parks, and recreation areas.

Shroud - A device which is designed to enclose or surround the area being blasted to minimize the atmospheric entrainment of fine particulates and direct that material to a confined area for disposal. The shroud shall have overlapping seams to prevent leakage of particulates, shall extend a minimum of 15 feet above the area being blasted, and shall have a shade factor of 95 percent or a control factor of 95 percent of particles 100 grit or greater. A shade factor is defined as the percent of area impermeable to particles or sunlight.

Vacuum blasting - Any abrasive blasting in which the spent abrasive, surface material, and dust resulting from blasting are immediately collected by a vacuum device, equipped with a high efficiency particulate filter.

Water storage tank - Any above-ground vessel designed and constructed for the purpose of storing potable water.

Wet abrasive blasting - Any abrasive blasting using compressed air as the propelling force, which mixes with water to minimize emissions.

Adopted September 20, 1991

Effective November 1, 1991

§111.133. Testing Requirements.

(a) Before abrasive blasting is performed on any previously-coated water storage tank, the owner or operator of the tank must determine if lead is present in the existing protective coating by applying the following test methods from the United States Environmental Protection Agency SW-846, Test Methods for Evaluating Solid Waste:

(1) Method 3050, Acid Digestion of Sediments, Sludges, and Soils; and

(2) Method 6010, Inductively Coupled Plasma Atomic Emission Spectroscopy, or Method 7000, Atomic Absorption Methods. Lead concentrations should be reported in micrograms per gram ($\mu\text{g/gm}$); or

(3) An alternate method approved in advance by the executive director or a designated representative of the Texas Natural Resource Conservation Commission (TNRCC).

(b) Results of the test(s) required in paragraph (a) must be available to the TNRCC staff or staff from governmental entities having jurisdiction at the site for the duration of the abrasive blasting project. The results must include the name of the testing facility and a person responsible for the accuracy of the test results.

(c) Successive coatings need not be retested following initial testing, provided the owner or operator of the water storage tank can furnish verifiable documentation that the lead level of the post-testing coatings is less than one percent (10,000 $\mu\text{g/gm}$) lead by weight.

Adopted September 20, 1991

Effective November 1, 1991

§111.135. Control Requirements For Surfaces With Coatings Containing Lead.

(a) The authority to conduct abrasive blasting activities under this section does not exempt or excuse any person from responsibility for the consequences, damages, or injuries resulting from the abrasive cleaning. The authority to conduct such activities under this regulation also does not exempt or excuse anyone from complying with all other applicable laws or ordinances, regulations, and orders of governmental entities having jurisdiction, even though the abrasive blasting is otherwise conducted in compliance with this regulation. The owner or operator of the water storage tank being blasted must control emissions from abrasive blasting in a manner that does not cause nuisance conditions, as defined in §101.4 of this title, relating to Nuisance.

(b) For water storage tanks with lead concentrations of one percent [10,000 micrograms per gram ($\mu\text{g/gm}$)] or greater in the coating, the owner or operator of the tank shall notify the appropriate Texas Natural Resource Conservation Commission (TNRCC) Regional Office and any local authorities having jurisdiction over abrasive blasting activities of the blasting in writing at least 10, but not more

than 30, working days prior to the date scheduled for the beginning of blasting operations. The notification must include:

- (1) the location of the tank;
- (2) the name of the abrasive blasting company;
- (3) the weight percent of lead in the coating;
- (4) the control methods to be used; and
- (5) the expected hours of operation and scheduled start and finish dates.

(c) Emissions from abrasive blasting of water storage tanks which have lead in concentrations of one percent (10,000 $\mu\text{g/gm}$) or greater by weight in the coating must be controlled by one of the following methods:

- (1) vacuum blasting;
- (2) shrouded wet abrasive blasting;
- (3) shrouded dry abrasive blasting, provided there are no private residences or public areas within 500 feet of the water storage tank;
- (4) shrouded hydroblasting; or
- (5) equivalent method approved in advance by the executive director or a designated representative of the TNRCC.

Adopted September 20, 1991

Effective November 1, 1991

§111.137. Control Requirements For Surfaces With Coatings Containing Less Than One Percent Lead.

(a) The authority to conduct abrasive blasting activities under this section does not exempt or excuse any person from responsibility for the consequences, damages, or injuries resulting from the abrasive cleaning. The authority to conduct such activities under this regulation also does not exempt or excuse anyone from complying with all other applicable laws or ordinances, regulations, and orders of governmental entities having jurisdiction, even though the abrasive blasting is otherwise conducted in compliance with this regulation. The owner or operator of the water storage tank being blasted must control emissions from abrasive blasting in a manner that does not cause nuisance conditions, as defined in §101.4 of this title, relating to Nuisance.

(b) When there are private residences or public areas within a distance of 500 feet of the water storage tank or ten times the height of the tank, whichever is greater, the owner or operator of the tank must control emissions from abrasive blasting by one of the following methods:

- (1) vacuum blasting;
- (2) shrouded wet abrasive blasting;
- (3) shrouded dry blasting;
- (4) shrouded hydroblasting; or

(5) equivalent method approved in advance by the executive director or a designated representative of the Texas Natural Resource Conservation Commission.

(c) When there are no private residences or public areas within a distance of 500 feet of the water storage tank or ten times the height of the tank, whichever is greater, no additional controls are required beyond those stipulated in §111.137(a).

Adopted September 20, 1991

Effective November 1, 1991

§111.139. Exemptions.

(a) Interior abrasive blasting of water storage tanks is exempt from §111.133, relating to Testing Requirements; §111.135, relating to Control Requirements For Surfaces With Coatings Containing Lead; and §111.137, relating to Control Requirements For Surfaces With Coatings Containing Less Than One Percent Lead, if no visible emissions to the atmosphere result from such cleaning.

(b) Any abrasive blasting process which propels abrasives at a rate of less than 500 pounds per day is exempt from §111.133, relating to Testing Requirements; §111.135, relating to Control Requirements For Surfaces With Coatings Containing Lead; and §111.137, relating to Control Requirements For Surfaces With Coatings Containing Less Than One Percent Lead.

(c) Any alternate control method approved in advance by the executive director or a designated representative of the Texas Natural Resource Conservation Commission (TNRCC) may be exempted from §111.135, relating to Control Requirements For Surfaces With Coatings Containing Lead; and §111.137, relating to Control Requirements For Surfaces With Coatings Containing Less Than One Percent Lead. An exemption may be revoked by the TNRCC at any time if the blasting project is causing nuisance conditions or a violation of any air quality standard.

Adopted September 20, 1991

Effective November 1, 1991

MATERIALS HANDLING, CONSTRUCTION, ROADS, STREETS, ALLEYS,

AND PARKING LOTS

§111.141. Geographic Areas of Application and Date of Compliance.

Section 111.141 of this title (relating to Geographic Areas of Application and Date of Compliance), §111.143 of this title (relating to Materials Handling), §111.145 of this title (relating to Construction and Demolition), §111.147 of this title (relating to Roads, Streets, and Alleys), and §111.149 of this title (relating to Parking Lots) shall apply to the following areas: the City of El Paso, including the Fort Bliss Military Reservation, except for training areas for tactical training, maneuvering, air support, and such other and further uses that are not inconsistent therewith, including access to and from said areas, unless otherwise specified; that portion of Harris County inside the loop formed by Beltway 8; and that area of Nueces County outlined in the Group II State Implementation Plan for Inhalable Particulate Matter adopted by the Texas Natural Resource Conservation Commission on May 13, 1988. Compliance with these sections shall be as soon as practicable, but no later than December 31, 1991, except as follows: compliance on the Fort Bliss Military Reservation and compliance with §111.145(3), relating to Construction and Demolition; the paving requirements of §111.147(1); and the street sweeping requirements of §111.147(2), relating to Roads, Streets, and Alleys, shall be as soon as practicable, but no later than December 10, 1993.

Adopted October 25, 1991

Effective February 12, 1992

§111.143. Materials Handling.

No person may cause, suffer, allow, or permit any material, except for abrasive material for snow and ice control, to be handled, transported, or stored without taking at least the following precautions to achieve maximum control of dust emissions to the extent practicable:

(1) Application of water or suitable chemicals or some other covering on materials stockpiles and other surfaces which can create airborne dusts.

(2) Installation, maintenance, and proper use of hoods, fans, and filters to enclose, collect, and clean the emissions of dusty materials; or

(3) Application of water or suitable chemicals, or complete covering of materials contained in open-bodied trucks, trailers, or railroad cars transporting such materials which can create airborne particulate matter in areas where the general public has access.

(A) Suitable wetting may be used as an alternative to covering in all areas except the City of El Paso.

(B) Complete covering, at a minimum, is required in the City of El Paso.

Adopted June 16, 1989

Effective July 18, 1989

§111.145. Construction and Demolition.

For the purpose of this section, the following restrictions apply if the area of land affected by the listed activities is more than one acre in size, except for the City of El Paso, where restrictions shall apply regardless of the size of the area of land affected. No person may cause, suffer, allow, or permit a structure, road, street, alley, or parking area to be constructed, altered, repaired, or demolished, or land to be cleared without taking at least the following precautions to achieve control of dust emissions:

(1) Use of water or of suitable oil or chemicals for control of dust in the demolition of structures, in construction operations, in work performed on a road, street, alley, or parking area, or in the clearing of land.

(2) Use of adequate methods such as wet-sandblasting and enclosure of work areas to prevent airborne particulate matter during sandblasting of structures or other similar operations.

(3) Application of asphalt, other paving materials, water, suitable oil, or chemicals on construction and/or demolition site access roads located in the City of El Paso.

Adopted October 25, 1991

Effective February 12, 1992

§111.147. Roads, Streets, and Alleys.

No person may cause, suffer, allow, or permit any public, industrial, commercial, or private road, street, or alley to be used without taking at least the following precautions to achieve control of dust emissions:

(1) Application of asphalt, water, or suitable oil or chemicals on the following unpaved surfaces, except in the City of El Paso and the Fort Bliss Military Reservation, except as noted in §111.141, where the use of paving materials is the only acceptable method of dust control, unless otherwise specified:

(A) Industrial Facility Roadways - all major in-plant roads and all truck or other heavy-duty vehicle pathways. Major in-plant roads shall be defined as those which are designed to accommodate two-way traffic and are at least 30 feet wide at least one point, measuring the distance from the edge of the undisturbed earth on either side of the established roadway. The executive director, with the concurrence of the United States Environmental Protection Agency, may grant a waiver from the requirement to pave an industrial facility roadway if the owner of the roadway demonstrates that the cost of paving is economically unreasonable compared to other methods of dust control specified in subsection (1).

(B) Public Thoroughfares - all roads and streets to which the public has general access.

(C) Commercial Roads - all roads which serve as access for more than 50 employees or as access to more than ten heavy-duty truck parking spaces.

(D) Residential Roads - all roads which serve as access for more than 20 residences and/or apartment units.

(E) Alleys - in the City of El Paso, alleys shall be paved at the rate of at least 15 miles per year.

(F) Levee Roads - in the City of El Paso, all levee roads and access to such roads shall be controlled with the application of asphalt, or suitable oil or chemicals.

(2) Removal from public thoroughfares, as necessary, of soil or other materials, except for sand applied for the specific purpose of snow or ice control. In the City of El Paso, removal of soil shall be by mechanical sweepers or their equivalent at the rate of four times per year for all public thoroughfares within the city limits and six times per week or as necessary for public thoroughfares within the central business district. For the purpose of this section, the central business district shall be defined as that area bordered by Loop 375 to the south, Santa Fe Street to the west, Missouri Street to the north, and Kansas Street to the east. The City of El Paso shall spot clean dirty roadways, and shall maintain street sweeping records for two years. Sand applied for the specific purpose of snow or ice control shall be removed as soon as such control is no longer necessary.

Adopted October 25, 1991

Effective February 12, 1992

§111.149. Parking Lots.

(a) No person may allow any vehicular parking surface having more than five parking spaces to be used unless dust is controlled by the appropriate application of asphalt, water, or suitable oil or chemicals.

(b) In the City of El Paso, parking surfaces with more than five parking spaces shall be paved or uniformly covered with gravel. This provision shall not apply to temporary parking lots defined as lots used for less than one month, after which access is prohibited. Such temporary lots shall be required to apply water or suitable oil or chemical. Lots with more than 100 parking spaces shall be paved or covered by an equivalent method determined by the executive director. An equivalent method shall not include the utilization of waste materials from industrial processes.

(c) Parking surfaces having five spaces or less and parking surfaces at a property designed for and used exclusively as a private residence housing not more than three families are exempt from these requirements.

Adopted June 16, 1989

Effective July 18, 1989

EMISSIONS LIMITS ON NONAGRICULTURAL PROCESSES

§111.151. Allowable Emissions Limits.

(a) No person may cause, suffer, allow, or permit emissions of particulate matter from any source to exceed the allowable rates specified in Table 1 as follows, except as provided by §111.153 of this title (relating to Emissions Limits for Steam Generators).

(b) If a source has an effective stack height less than the standard effective stack height as determined from Table 2 as follows, the allowable emission level must be reduced by multiplying it by:

$$\left(\frac{\text{Effective Stack Height}}{\text{Standard Effective Stack Height}} \right)^2$$

(c) Effective stack height shall be calculated by the following equation:

$$h_e = h + 0.83 v_e D_e \left[1.5 + 0.82 \left(\frac{T_e - 550}{T_e} \right) D_e \right]$$

Where:

h_e = Effective stack height in feet (ft)

h = Physical stack height above ground level in feet (ft)

v_e = Stack exit velocity in feet per second (ft/sec)

D_e = Stack exit inside diameter in feet (ft)

T_e = Stack exit temperature in degrees Rankine (°R)

Adopted June 16, 1989

Effective July 18, 1989

TABLE 1
ALLOWABLE PARTICULATE EMISSION RATES
FOR SPECIFIC FLOW RATES

<u>Effluent Flow Rate</u> <u>acfm</u>	<u>Rate of Emission</u> <u>TSP lb/hr</u>
1,000	3.5
2,000	5.3
4,000	8.2
6,000	10.6
8,000	12.6
10,000	14.5
20,000	22.3
40,000	34.2
60,000	44.0
80,000	52.6
100,000	60.4
200,000	92.9
400,000	143.0
600,000	184.0
800,000	219.4
1,000,000	252.0

Interpolation and extrapolation of the data in this table shall be accomplished by the use of the equation $E = 0.048 q^{0.62}$ for total suspended particulate (TSP) where E is the allowable emission rate in pounds per hour (lb/hr) and q is the stack effluent flow rate in actual cubic feet per minute (acfm).

TABLE 2
STANDARD EFFECTIVE STACK HEIGHT
BASED ON SPECIFIC FLOW RATES

Effluent Flow Rate acfm	Standard Effective Stack Height ft
1,000	12
2,000	15
4,000	19
6,000	22
8,000	24
10,000	26
20,000	34
40,000	43
60,000	49
80,000	55
100,000	59
200,000	75
400,000	96
600,000	110
800,000	122
1,000,000	132

Interpolation and extrapolation of the data in this table shall be accomplished by the use of the equation $H_e = 1.05 q^{0.35}$ where H_e is the standard effective stack height in feet and q is the stack effluent flow rate in acfm.

§111.153. Emissions Limits for Steam Generators.

(a) Section 111.151 of this title (relating to Allowable Emissions Limits) shall not apply to any oil or gas fuel-fired steam generator with a heat input greater than 2500 million British thermal units per hour or any solid fossil fuel-fired steam generator.

(b) No person may cause, suffer, allow, or permit emissions of particulate matter from any solid fossil fuel-fired steam generator to exceed 0.3 pound of total suspended particulate per million Btu heat input, averaged over a two-hour period.

(c) No person may cause, suffer, allow or permit emissions of particulate matter from any oil or gas fuel-fired steam generator with a heat input greater than 2500 million Btu per hour to exceed 0.1 pound of total suspended particulate per million Btu input averaged over a two-hour period.

Adopted June 16, 1989

Effective July 18, 1989

§111.155. Ground Level Concentrations.

No person may cause, suffer, allow, or permit emissions of particulate matter from a source or sources operated on a property or from multiple sources operated on contiguous properties to exceed any of the following net ground level concentrations:

(1) Two hundred micrograms per cubic meter of air sampled, averaged over any three consecutive hours.

(2) Four hundred micrograms per cubic meter of air sampled, averaged over any one-hour period.

Adopted June 16, 1989

Effective July 18, 1989

EMISSIONS LIMITS ON AGRICULTURAL PROCESSES

§111.171. Emissions Limits Based on Process Weight Method.

No person affected by §3.10(e) of the Texas Clean Air Act may cause, suffer, allow, or permit emissions of particulate matter from any or all sources associated with a specific process to exceed the allowable levels specified in Table 3 as follows, except as provided by §111.173 of this title (relating to Emissions Limits Based on Alternate Method). Any affected person who does not request an alternate method and notify the executive director in writing shall be regulated by the process weight method.

Adopted June 16, 1989

Effective July 18, 1989

§111.173. Emissions Limits Based on Alternate Method.

Any person affected by §3.10(e) of the Texas Clean Air Act who does not wish to be regulated by the process weight method may request an alternate method of regulation which the executive director finds will provide equivalent emission control efficiency to §111.171 of this title (relating to Emissions Limits Based on Process Weight Method).

Adopted June 16, 1989

Effective July 18, 1989

§111.175. Exemptions.

Any person affected by §3.10(e) of the Texas Clean Air Act shall be exempt from the following: §111.111 of this title (relating to Requirements for Specified Sources), §111.141 of this title (relating to Geographic Areas of Application and Date of Compliance), §111.143 of this title (relating to Materials Handling), §111.145 of this title (relating to Construction and Demolition), §111.147 of this title (relating to Roads, Streets, and Alleys), §111.149 of this title (relating to Parking Lots), §111.151 of this title (relating to Allowable Emissions Limits), §111.153 of this title (relating to Emissions Limits for Steam Generators), and §111.155 of this title (relating to Ground Level Concentrations). All other provisions of this title shall apply.

Adopted June 16, 1989

Effective July 18, 1989

TABLE 3
ALLOWABLE RATE OF EMISSION
BASED ON PROCESS WEIGHT RATE

PROCESS WEIGHT RATE lb/hr	RATE OF EMISSION lb/hr	PROCESS WEIGHT RATE lb/hr	RATE OF EMISSION lb/hr
1,000	1.6	16,000	24.2
1,500	2.4	18,000	27.2
2,000	3.1	20,000	30.1
2,500	3.9	30,000	44.9
3,000	4.7	40,000	59.7
3,500	5.4	50,000	64.0
4,000	6.2	60,000	67.4
5,000	7.7	70,000	70.5
6,000	9.2	80,000	73.2
7,000	10.7	90,000	75.7
8,000	12.2	100,000	78.1
9,000	13.7	150,000	87.7
10,000	15.2	200,000	95.2
12,000	18.2	250,000	101.5
14,000	21.2	500,000	123.9

Interpolation of the data in this table for process weights up to 40,000 pounds per hour (lb/hr) shall be accomplished by the use of the equation $E = 3.12 (p^{0.985})$, and interpolation and extrapolation of the data for process weight rates in excess of 40,000 lb/hr shall be accomplished by use of the equation $E = 25.4 (p^{0.287})$ where E = rate of emission in lb/hr and p = process weight rate in tons per hour.

EXEMPTIONS FOR PORTABLE OR TRANSIENT OPERATIONS

§111.181. Exemption Policy.

All portable facilities and transient operations, such as portable rock crushers but excluding portable hot-mix asphaltic concrete facilities, engaged in public work projects in any county except Dallas, El Paso, or Harris are exempt from the requirements of §111.111 of this title (relating to Requirements for Specified Sources), §111.113 of this title (relating to Alternate Opacity Limitations), §111.151 of this title (relating to Allowable Emissions Limits), §111.153 of this title (relating to Emissions Limits for Steam Generators), and §111.155 of this title (relating to Ground Level Concentrations) if the conditions of §111.183 of this title (relating to Requirements for Exemption), are met.

Adopted June 16, 1989

Effective July 18, 1989

§111.183. Requirements for Exemption.

(a) The facility shall be located at least one mile outside the nearest corporate limits of any city or town.

(b) The facility shall be located at least one mile from any recreational area or any occupied building other than that located on the same property as the facility.

(c) The facility shall be equipped with cyclones, or wet scrubbers, or water sprays at the material transfer points open to the atmosphere, or other equipment or systems approved by the executive director, properly installed, in good working order, and in operation.

(d) The facility shall not operate on the same property for a period of more than six months.

(e) The emissions from the facility shall not create a nuisance.

Adopted June 16, 1989

Effective July 18, 1989